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July 5, 2019

RADM Thomas A. Cropper, President
California State University Maritime Academy
200 Maritime Academy Drive
Vallejo, CA 94590

Dear Admiral Cropper:

Subject: Audit Report 19-18, Health and Safety, California State University Maritime Academy

We have completed an audit of *Health and Safety* as part of our 2019 Audit Plan, and the final report is attached for your reference. The audit was conducted in accordance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

I have reviewed the management response and have concluded that it appropriately addresses our recommendations. The management response has been incorporated into the final audit report, which has been posted to Audit and Advisory Services' website. We will follow-up on the implementation of corrective actions outlined in the response and determine whether additional action is required.

Any observations not included in this report were discussed with your staff at the informal exit conference and may be subject to follow-up.

I wish to express my appreciation for the cooperation extended by the campus personnel over the course of this review.

Sincerely,



Larry Mandel
Vice Chancellor and Chief Audit Officer

c: Timothy P. White, Chancellor

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The California State University
Audit and Advisory Services

HEALTH AND SAFETY

**California State University
Maritime Academy**

Audit Report 19-18
June 4, 2019

EXECUTIVE SUMMARY

OBJECTIVE

The objectives of the audit were to ascertain the effectiveness of operational and administrative controls related to health and safety (HS) and to ensure compliance with relevant federal and state regulations; Trustee policy; Office of the Chancellor (CO) directives; and campus procedures.

CONCLUSION

Based upon the results of the work performed within the scope of the audit, except for the weaknesses described below, the operational and administrative controls for HS as of April 19, 2019, taken as a whole, provided reasonable assurance that risks were being managed and objectives were met.

We noted that the California State University Maritime Academy (Cal Maritime) had an appropriate framework for HS, with guidance primarily provided by safety and risk management (SRM). However, we found that the campus and Training Ship Golden Bear (TSBG) had separate HS policies and procedures that were not integrated or were missing required elements of occupational health and safety regulations. In addition, hazardous materials (HAZMAT) were not always properly labeled, and safety equipment was not always regularly inspected. This is a repeat observation from the 2018 Hazardous Materials Management (HMM) audit. We also found that the campus did not consistently maintain records of completed preventive maintenance (PM) of heating, ventilation, and air conditioning (HVAC) equipment, and hazard assessments and workplace HS inspections were not conducted in accordance with campus and regulatory requirements. Also, employee and student HS training was not always completed, and training records were not always maintained. Further, the campus did not consistently notify employees about locations that contained asbestos.

Specific observations, recommendations, and management responses are detailed in the remainder of this report.

OBSERVATIONS, RECOMMENDATIONS, AND RESPONSES

1. POLICIES AND PROCEDURES

OBSERVATION

The campus Injury and Illness Prevention Program (IIPP) and the TSGB policies for safety regulations were not adequately integrated to satisfy campus and state regulatory requirements related to occupational health and safety, and certain campus and TSGB HS programs and plans were not formalized or did not address required elements.

We found that:

- Neither the campus IIPP document nor the TSGB policies was complete. The campus IIPP did not address occupational health and safety elements for the TSGB, and the TSGB policies did not satisfy campus and state regulatory requirements related to occupational health and safety or refer to the campus IIPP. Further, these separate regulations, which were also incomplete, limited the SRM director's oversight of the campus IIPP and responsibilities as the designated person ashore (DPA).

We noted that the IIPP was completed in late 2018, after the HMM audit. This IIPP document is required by California Occupational Safety and Health Administration (Cal OSHA) and serves as a written workplace safety program for the campus. Also, according to California Code of Regulations, Title 8 §3203, *Injury Illness Prevention Program*, an effective IIPP has eight required elements, including responsibility, compliance, communication, hazard assessment, accident/exposure investigation, hazard correction, training and instruction, and recordkeeping. Cal Maritime's SRM director has oversight responsibility for the campus IIPP.

We also noted that Cal Maritime's campus extends to the TSGB when the vessel is docked, and that during the normal course of academic and university operations, employees and students are onboard the vessel. However, the TSGB does not recognize or follow the campus IIPP requirements or Cal OSHA regulations, which in some cases are more stringent than federal OSHA regulations. Instead, the TSGB complies with specific United States Coast Guard regulations and operates under the federal safety management system (SMS), which includes a vessel operation manual (VOM) and a shoreside operation manual (SOM). The captain and director of marine programs has authority for the TSGB, and Cal Maritime's SRM director serves as the DPA, a key role in the effective implementation of the TSGB SMS.

- Other campus safety programs had yet to be formalized and communicated to the campus. These programs include the Respiratory Protection Program (RPP), Bloodborne Pathogen Exposure Control Program (ECP), and Medical Monitoring Program (MMP). We noted that the SRM director had posted baseline information about these programs on the campus website since March 2018. However, detailed programs were only in the early stages of development at the time of the audit.

Further, the TSGB's RPP, ECP, and MMP needed improvement, as they were not detailed and did not address required regulatory elements of 8 CCR §5144, *Respiratory Protection*,

8 CCR §5193, *Bloodborne Pathogens*, and Executive Order (EO) 1039, *Occupational Health & Safety Policy*, respectively.

Current and complete HS policies and procedures, plans, and programs improve compliance with regulatory requirements and promote a healthy and safe environment for employees and students.

RECOMMENDATION

We recommend that the campus:

- a. Review and update all campus and TSGB HS policies and procedures, plans, and programs as noted above, including the IIPP, RPP, ECP, and MMP, ensure that these updates adequately integrate the policies to satisfy campus and state regulatory requirements related to occupational health and safety, and strengthen the SRM director’s oversight of the campus IIPP and responsibilities as the designated DPA.
- b. Communicate and distribute updated policies and procedures, plans, and programs to appropriate campus administrators, staff, and faculty.

MANAGEMENT RESPONSE

We concur and will further refine, document, and communicate the policies, procedures, plans, and program updates that bridge operational dynamics between the campus and the Training Ship Golden Bear.

Expected completion date: October 30, 2019

2. HAZARDOUS MATERIALS AND SAFETY EQUIPMENT INSPECTIONS

OBSERVATION

HAZMAT was not always properly labeled, safety and HVAC equipment was not always adequately inspected and maintained, and preventive maintenance (PM) records were not always maintained.

We inspected eight laboratory and non-laboratory locations, and we found that:

- At one location, HAZMAT stored in secondary containers was not properly labeled. Specifically, the label did not include the written or graphic hazard warning, as required by 8 CCR §5194, *Hazard Communication*. Instead, the label listed only the chemical formula and common name.
- At four locations, monthly inspection of fire extinguishers was not performed. Specifically, inspection tags were either not completed at all, had not been updated since August 2018, or had not been updated in calendar year 2019.
- At one location, three fire extinguishers that were on an evacuation map could not be located.

- At two locations, monthly inspection of the eyewash station was not performed.
- At one location where an eye wash station was not available, the eye wash kit had not been replenished with necessary supplies.

We noted that this observation is a repeat issue from the 2018 hazardous materials management audit.

Additionally, we requested records of completed PM records for the science building to verify that heating, ventilation, and air conditioning (HVAC) systems were inspected annually in accordance with 8 CCR §5142, *Mechanically Driven HVAC Systems to Provide Minimum Building Ventilation*. Although we requested records for the audit scope of three years, the facilities department could only provide records for one year, from September 2017 through 2018. According to the facilities department, PM records prior to this period were lost when the department transitioned from one computerized maintenance management system (CMMS) to another.

Properly labeling HAZMAT, performing regular inspections of safety and HVAC equipment, and maintaining PM records helps to ensure a healthy and safe environment for employees and students.

RECOMMENDATION

We recommend that the campus:

- a. Remind all personnel involved in handling HAZMAT of the proper regulatory and campus requirements, including, but not limited to, labeling of secondary containers.
- b. Remind applicable personnel of the proper regulatory and campus requirements to document safety equipment inspections.
- c. Review the evacuation map for the location where fire extinguishers could not be located to determine whether it is accurate. If so, ensure that all missing fire extinguishers are replaced; if not, update the evacuation map accordingly and replace the necessary fire extinguishers.
- d. Maintain records of completed inspections and PM of all campus HVAC systems.
- e. Provide training as needed, including, but not limited to, labeling of HAZMAT and inspecting and maintaining safety equipment and HVAC systems.

MANAGEMENT RESPONSE

We concur and will:

- a. Remind all personnel involved in handling HAZMAT of the proper regulatory and campus requirements, including, but not limited to, labeling of secondary containers.
- b. Remind applicable personnel of the proper regulatory and campus requirements to document safety equipment inspections.

- c. Replace the missing fire extinguishers.
- d. Maintain records of completed inspections and PM of all campus HVAC systems.

Expected completion date: October 30, 2019

3. HAZARD ASSESSMENTS

OBSERVATION

The campus did not consistently perform written hazard assessments.

According to 8 CCR §3380, *Personal Protective Devices*, employers shall assess the workplace to determine whether hazards are present or are likely to be present that necessitate the use of personal protective equipment (PPE).

The SRM director had developed and communicated the job hazard analysis (JHA) template for departments to document workplace hazard assessments and to help encourage compliance. However, we found that this procedure appeared to be in the initial stages of implementation, as some departments, including academic and non-academic areas, had not yet used or completed the JHA. For example, some school deans, department chairs, and faculty indicated that hazard assessments were performed but not documented. We also found that the TSGB had a fully implemented task-specific JHA process in place, which serves to comply with the requirement to perform written hazard assessment.

We noted that the campus had received the Risk and Safety Solutions (RSS) software in December 2018 and intends to use the assessment module within RSS to systematically conduct and document workplace hazard assessments. However, we found that implementation of RSS has been delayed due to early problems with connectivity and configuration.

Performing hazard assessments to identify hazards in workplaces that necessitate the use of PPE can help to reduce potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Remind appropriate campus administrators, staff, and faculty of the importance of performing written hazard assessments.
- b. Establish a process to improve campuswide compliance with the written hazard assessment requirement.
- c. Maintain records showing that hazard assessments were performed.

MANAGEMENT RESPONSE

We concur and will improve upon existing practices to implement a process to ensure that hazard assessments are performed and documented for all campus workplaces that necessitate the use of PPE, and will remind appropriate campus administrators, staff, and faculty of the importance of performing written hazard assessments.

Expected completion date: October 30, 2019

4. HEALTH AND SAFETY WORKPLACE INSPECTIONS**OBSERVATION**

The campus did not consistently perform HS workplace inspections.

We noted that the campus IIPP requires every workplace to be inspected on a regular basis, and those areas with potentially greater hazards to be inspected more frequently as necessary, by request or through risk assessments. Under the IIPP, each department is responsible for ensuring that a regular and systematic inspection process is scheduled and performed for all departmental areas.

We found that the SRM director had developed and communicated an inspection checklist for departments to consistently document workplace inspections, and to help encourage compliance. The SRM made multiple attempts to collect completed checklists from all departments; however, most departments had not performed HS inspections or used the established checklist. According to some school deans, department chairs, and faculty, workplace inspections were performed but not documented. The TSGB performed and documented separate workplace inspections, as required by their safety management system (SMS).

At the time of review, the campus was implementing RSS software and intended to use the inspect module to systematically conduct and document HS workplace inspections.

Performing HS workplace inspections helps to reduce unsafe conditions and the potential for injuries, accidents, litigation, and regulatory sanctions.

RECOMMENDATION

We recommend that the campus:

- a. Remind appropriate college administrators, staff, and faculty of the importance of performing HS inspections on a regular basis.
- b. Establish a process to improve department compliance with the requirement to perform HS workplace inspections.
- c. Maintain records showing that all HS workplace inspections were performed.

MANAGEMENT RESPONSE

We concur and will improve upon existing practices to implement a process to ensure that hazard inspections are performed and documented for all campus workplaces that necessitate the use of PPE, and will remind appropriate campus administrators, staff, and faculty of the importance of performing HS inspections on a regular basis.

Expected completion date: October 30, 2019

5. EMPLOYEE HEALTH AND SAFETY TRAINING**OBSERVATION**

Campus employees did not always complete required HS training.

We reviewed Skillport (currently known as CSU Learn) reports detailing employee completion of certain HS training for calendar year 2018, and we found that:

- For IIPP training, the completion rate was 78 percent, or 160 of 204 employees. We noted that the training report population of 204 employees was incomplete, as it excluded certain campus staff and faculty.

According to 8 CCR §3203, *Injury Illness Prevention Program*, IIPP training is also required whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard. Noting that the campus IIPP was implemented in March 2018, we expected all campus employees would receive initial IIPP training within a reasonable period of time. According to human resources and SRM, because IIPP training was assigned during the summer academic break, some employees were inadvertently excluded.

- For Hazard Communication – Cal OSHA training, the completion rate was 80 percent, or 36 of 45 assigned employees, based on job classification.
- For PPE – Cal OSHA training, the completion rate was 63 percent, or 30 of 48 assigned employees, based on job classification.
- For Hazardous Waste Generator training, the completion rate was 83 percent, or 20 of 24 assigned employees, based on job classification.

According to campus human resources and SRM, a process exists to electronically notify employees with overdue or incomplete HS training. However, we noted that ongoing monitoring did not occur to ensure that required training was completed.

Completion of HS training ensures employees' compliance with program provisions, increases safety awareness, and reduces potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Assess HS training needs to ensure that all appropriate employees are assigned necessary and required training.
- b. Establish a process to ensure that employees complete required HS training, including notification to employees with overdue or incomplete training, and follow through to ensure that this training is completed.

MANAGEMENT RESPONSE

We concur and will:

- a. Assess training needs and identify all employees who require safety training to ensure that required training is assigned.
- b. Establish a process to ensure that employees complete required HS training, including notification to employees with overdue or incomplete training, and follow through to ensure that this training is completed.

Expected completion date: October 30, 2019

6. STUDENT HEALTH AND SAFETY TRAINING**OBSERVATION**

Student HS training records were not consistently maintained, as required by EO 1039, *California State University – Occupational Health & Safety Policy*.

We reviewed eight courses from all three Cal Maritime schools that required the use of PPE because of the potential for exposure to biological, chemical, and/or physical hazards, to verify whether an HS training program existed and whether students received required training. We found that:

- For two chemistry laboratory courses, records for completed student HS training were not provided by the assigned instructor. Instead, a template of *Laboratory Guidelines* used in the course was provided, which may indicate that a HS training program exists, but does not show that training occurred.
- For two engineering laboratory courses, the assigned instructor did not respond to our request for training records. As such, we could not verify whether an HS training program existed or whether students received required training.

Effective administration of the student HS training program helps to ensure that students are informed of potential hazards and that necessary safety practices and procedures are implemented to help reduce potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Define, document, and communicate the responsibility for providing student HS training, including the development and implementation of a student HS training program for all educational activities where there is potential for exposure to biological, chemical, and/or physical hazards and require the use of PPE.
- b. Document all student HS training programs, and maintain training records for all students.

MANAGEMENT RESPONSE

We concur and will:

- a. Further define, document, and communicate the responsibility for providing student HS training, including the development and implementation of a student HS training program for all educational activities where there is potential for exposure to biological, chemical, and/or physical hazards and require the use of PPE.
- b. Document all student HS training programs and maintain training records for all students.

Expected completion date: October 30, 2019

7. ASBESTOS NOTIFICATION

OBSERVATION

The campus did not properly notify employees about locations that contained asbestos.

We found that although the campus provided a written annual asbestos notification to each employee in 2019, as required by Health and Safety Code (HSC) 25915.2 (a), it did not provide this notification in 2016, 2017, or 2018.

Proper notification of asbestos decreases the risk that employees will be exposed to asbestos and the risk of potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus provide employees with an annual written asbestos notification.

MANAGEMENT RESPONSE

The campus provided the annual written asbestos notification in January 2019.

GENERAL INFORMATION

BACKGROUND

California state regulations require all employers, including the California State University (CSU), to provide a safe and healthy work environment. Each campus has a designated environmental health and safety (EH&S) program administrator that is responsible for developing and maintaining a campus HS program.

All CSU campuses purchase hazardous materials for both instructional and research purposes, most prominently in colleges that focus on the sciences, fine arts, and liberal arts. In addition, campus maintenance departments such as custodial services, facilities, and auto shops may use materials that are known to have properties that are harmful to humans and the environment. Nearly all of the areas that use hazardous materials generate hazardous waste that is subject to strict regulations for safe and proper storage, transport, and disposal.

California regulations relating to HS are primarily codified in the California *Health and Safety Code* (HSC) and in Titles 8 and 22 of the CCR. California's Division of Occupational Safety and Health (Cal/OSHA) is primarily responsible for the enforcement of the state's occupational HS laws and regulations. Title 8 of the CCR addresses hazardous materials safety, including, but not limited to, training, communication, storage, and safety. Specific to laboratory environments, the *Occupational Exposure to Hazardous Chemicals in Laboratories* standard (8 CCR §5191) requires that the employer designate a chemical hygiene officer and have a written chemical hygiene plan that includes, among other things, provisions for worker training, criteria for the use of personal protective equipment and engineering controls, and standard operating procedures for handling hazardous materials. Title 22 of the CCR addresses hazardous materials waste management.

The primary CSU HS policy is EO 1039, *Occupational Health and Safety*. This policy requires campuses to develop, implement, and maintain a HS program and also addresses student HS training. EO 1069, *Risk Management and Public Safety*, delegates systemwide administration oversight and programmatic responsibility for environmental HS to Systemwide Risk Management.

At Cal Maritime, the SRM department operates within the division of administration and finance. SRM is responsible for maintaining effective policies regarding health and safety and providing safety programs, information, and guidance to the campus community, including students, faculty, staff, and visitors. In addition, SRM has the capacity to provide certain safety-related training. Safety programs relate to personal safety and well-being, environmental stewardship, and risk aversion. In addition, SRM's responsibility extends to the TSBG when the ship is in port at Cal Maritime. When the TSBG is at sea, the captain and director of marine programs has full authority and must comply with other laws and requirements, such as those of the Department of Transportation Maritime Administration and the United States Coast Guard.

In 2017, due to HS concerns at two CSU campuses, the Joint Legislative Audit Committee directed the California State Auditor (CSA) to review HS compliance at four campuses (Channel Islands, Sacramento, San Diego, and Sonoma), as well as oversight by the CO. The review noted several issues, including observations relating to the annual evaluation of chemical

plans; monitoring and documenting of student and employee HS training; and consistent and timely inspections of safety equipment. Based on the nature and trends of the observations noted in the CSA review, Audit and Advisory Services informed the Board of Trustees that it would perform reviews at all CSU campuses in 2019.

SCOPE

We visited the Cal Maritime campus from March 25, 2019, through April 19, 2019. Our audit and evaluation included the audit tests we considered necessary in determining whether operational and administrative controls are in place and operative. The audit focused on procedures in effect from January 1, 2016, through April 19, 2019.

Specifically, we reviewed and tested:

- Oversight and administration of the campus HS program, including clearly defined roles and responsibilities; appropriate safety and chemical committees; departmental self-audits and monitoring practices; and current policies and procedures.
- The adequacy and availability of safety equipment, including evaluation of the chemical hygiene plan; provision of personal protective equipment; and regular inspections and monitoring of key safeguards and engineering controls.
- Proper storage and safety of hazardous materials, including procurement; maintenance of accurate inventories; appropriate labeling and storage practices; and access controls.
- Communications and training processes, including evaluation of the hazard communication plan; availability of material safety data sheets; asbestos notifications and signage; and documentation and monitoring of student and employee training.
- Whether appropriate safety programs were in place, when applicable, for radiation sources; laser safety; bloodborne pathogens; respiratory protection; and spill containment.
- Appropriate identification, storage, and monitoring of accumulated hazardous waste.

As a result of changing conditions and the degree of compliance with procedures, the effectiveness of controls changes over time. Specific limitations that may hinder the effectiveness of an otherwise adequate system of controls include, but are not limited to, resource constraints, faulty judgments, unintentional errors, circumvention by collusion, and management overrides. Establishing controls that would prevent all these limitations would not be cost-effective; moreover, an audit may not always detect these limitations.

Our testing and methodology, which was designed to provide a review of key operational and administrative controls, included interviews, walkthroughs, and detailed testing on certain aspects of the HS program. The review was limited to gaining reasonable assurance that essential elements of the HS program were in place and did not examine all aspects of the program. We did not re-perform all testwork completed in our 2018 HMM audit at Cal Maritime. Instead, for those areas tested in the HMM audit that are also included in the

current audit scope, we reviewed the implementation of campus corrective actions for any noted issues.

CRITERIA

Our audit was based upon standards as set forth in federal and state regulations and guidance; Trustee policy; Office of the Chancellor directives; and campus procedures; as well as sound administrative practices and consideration of the potential impact of significant risks. This audit was conducted in conformance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

This review emphasized, but was not limited to, compliance with:

- 10 Code of Federal Regulations (CFR) Part 20, *Standards for Protection Against Radiation*
- 29 CFR Part 1910, *Occupational Safety and Health Standards*
- 46 CFR Part 310, *Merchant Marine Training*
- California HSC Division 20, *Miscellaneous Health and Safety Provisions*
- CCR Title 8, *Industrial Relations*
- CCR Title 17, *Public Health*
- CCR Title 19, *Public Safety*
- CCR Title 22, Division 4.5, *Environmental Health Standards for the Management of Hazardous Waste*
- EO 943, *Policy on University Health Services*
- EO 1031, *Systemwide Records/Information Retention and Disposition Schedules Implementation*
- EO 1039, *California State University - Occupational Health & Safety Policy*
- EO 1069, *Risk Management and Public Safety*
- Collective Bargaining Agreement, Unit 10, Article 29, *Health and Safety*
- Cal Maritime *Chemical Hygiene Plan*
- Cal Maritime *Hazard Communication Program*
- Cal Maritime *Injury Illness Prevention Program*
- Cal Maritime *Procurement Guidelines*
- Cal Maritime *TSGB Vessel Operations Manual*
- Cal Maritime *TSGB Shoreside Operations Manual*

AUDIT TEAM

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